

LISTING OF THE CLAIMS

1. (Previously presented) A method of producing multiple transgenic wheat plants from a single explant comprising:

providing an explant presenting a plurality of meristems;

culturing said explant in a first multiple bud inducing media suitable for inducing production of a plurality of buds from at least one of said meristems;

introducing exogenous DNA into more than one of said plurality of buds;

removing said plurality of buds from said first media and transferring said plurality of buds to a second media suitable for induction of elongation of said buds into shoots;

harvesting and transferring said shoots to a culture medium that promotes root development; and

culturing said transferred shoots to produce multiple transgenic wheat plants.

2. (Previously presented) The method of claims 1, wherein said multiple bud inducing media comprises a cytokinin and an auxin.

3. (Previously presented) The method of claims 2, wherein said cytokinin is thidiazuron.

4. (Previously presented) The method of claims 2, wherein the concentration of said cytokinin is between 2.0mg/L and 7.5mg/L.

5. (Previously presented) The method of claims 2, wherein said cytokinin is thidiazuron and said auxin is selected from the group consisting of 2,4-D and picloram.

6. (Previously presented) The method of claims 5, wherein the concentration of thidiazuron is between 2.0mg/L and 7.5mg/L and the concentration of auxin is between 0.5mg/L and 2.0mg/L.

7. (Previously presented) The method of claims 1, wherein said plurality of meristems contains the scutellar node.
8. (Previously presented) The method of claims 1, wherein said explant is a wheat mesocotyl explant.
9. (Previously presented) The method of claims 1, wherein said exogenous DNA comprises a nucleic acid encoding a protein capable of conferring resistance to a selection agent.
10. (Previously presented) The method of claims 9, further comprising a step of selecting for plants containing the protein conferring resistance to a selection agent.
11. (Previously presented) The method of claims 1, wherein said exogenous DNA is introduced via biolistic particle bombardment.
12. (Previously presented) The method of claims 1, wherein said exogenous DNA is introduced via *Agrobacterium*-mediated transformation.
13. (Previously presented) A method of producing multiple transgenic wheat plants from a single explant comprising:

providing a wheat mesocotyl explant presenting a plurality of meristems;

culturing said wheat mesocotyl explant on a first media, comprising thidiazuron at a concentration of between about 2.0 mg/L and 7.5 mg/L, and 2,4-D at a concentration of about 0.5 mg/L and 2.0 mg/L, to induce the production of a plurality of buds from at least one of said plurality of meristems;

introducing exogenous DNA into at least one of the cells of said plurality of buds;

removing said plurality of buds from said first media and transferring said plurality of buds to a second media suitable for induction of elongation of said buds into shoots;

culturing said shoots to produce multiple transgenic wheat plants.

14. (Previously presented) The method of claim 13, wherein said exogenous DNA is introduced via *Agrobacterium*-mediated transformation.
15. (Previously presented) The method of claim 13, wherein said exogenous DNA is introduced via biolistic particle bombardment.
16. (Previously presented) The method of claim 13, further comprising a step of selecting for plants containing the exogenous DNA.